

***ERIGERON DECRESCENS* (ASTERACEAE: ASTEREAE),
A NEW SPECIES FROM SOUTHEASTERN ARIZONA**

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ABSTRACT

Erigeron decrescens Nesom & Roll, **sp. nov.**, is described from desert grassland near the Pat Hills of Cochise Co., Arizona. It is hypothesized to be derived from the *Erigeron divergens* complex and grows in close association with both an expression of typical annual *E. divergens* and the perennial *Erigeron incomptus*. Plants of *E. decrescens* are set apart especially by their diminutive size — the stems are only 2–3.5 cm tall and the ray corollas are conyza-like, barely extending beyond the involucre.

In an ongoing floristic inventory of the Pat Hills desert grassland of Cochise County (Roll 2018), a distinctive population of *Erigeron* has been discovered, documented here as a previously undescribed species.

ERIGERON DECRESCENS Nesom & Roll, **sp. nov.** **TYPE:** Arizona. Cochise Co.: Pat Hills, ca. 30 km (by air) SE of Willcox in the Sulphur Springs Valley, W of Chiricahua Mts, [see pin marking on Fig. 3], desert grassland dominated by *Prosopis velutina*, *Isocoma tenuisecta*, *Erigeron incomptus*, *Eragrostis lehmanniana*, *Sporobolus wrightii*, *Hilaria mutica*, and *Hopia obtusa*, at the edge of a periodically wet depression in a small draw at the bottom of an andesitic hillside, 4540 ft, 22 Apr 2019, C.M. Roll 2865 (holotype: ARIZ; isotype: PH).

Similar in vestiture, leaf shape, and fruit morphology to plants of the *Erigeron divergens* complex but different in its much shorter stems, densely strigose stem vestiture, smaller heads with ray corollas barely longer than the involucre, and deeply cup-shaped involucre.

Winter annuals from a thickened taproot and multicapital, highly condensed caudex. **Stems** multiple from the base, erect to ascending, 2–3.5 mm, densely and loosely strigose to strigose-villous with ascending hairs, minutely glandular. **Leaves** mostly basal, persistent, blades obovate-spatulate, basally attenuate to a narrow petiole often as long as the blade, 2–4.5 cm long, blades 3–15 mm wide, margins entire or with 1–2(–3) pairs of teeth or lobes, faces finely and evenly hirsute to loosely strigose-hirsute, minutely glandular; cauline leaves linear. **Heads** 1 per stem, at the level of the leaves or slightly above or below, buds erect. **Involucre** deeply cupulate, 8–10 mm wide (pressed). **Phyllaries** in 2(–3) series of subequal length, linear-lanceolate, 3–3.5 mm long, hirsute to hirsute-villous with long, multicellular, flattened hairs, minutely glandular. **Ray florets** ca. 80–150; corollas white, drying white or becoming purplish abaxially, ca. 3.5 mm long, tube with prominent, long, patent, 2-seriate hairs, laminae 0.1–0.2 mm wide. **Disc corollas** ca 1.5 mm long, throats not indurate or inflated. **Achenes** oblong, slightly compressed, ca. 0.8 mm long, 2-nerved, faces sparsely strigose; pappus of 8–10 fragile bristles 1 mm long, with a minute, fimbriate outer corona.

Erigeron decrescens is currently known only from the type locality, where plants are abundant around the depression. Flowering begins in late March and continues into May.

The plants appear to be winter annuals, germinating with the rains of late fall and early winter and continuing to grow with the extra moisture on the margins of the wet depression, an unusual desert grassland habitat. Other annuals around the depression include these: *Veronica peregrinus*, *Androsace occidentalis*, *Calandrinia ciliata*, *Myosurus minimus*, *Descurainia pinnata*, *Spermolepis latiflora*, *Verbena bracteata*, *Plantago virginica*, *Eryngium heterophyllum*, and *Erigeron divergens*.

Plants of *Erigeron divergens* Torr. & Gray at the type locality are annual, with multiple decumbent-ascending stems from the base and solitary heads topping unbranched stems (e.g., Fig. 2; see Nesom 2015). The perennial *E. incomptus* A. Gray (with woody caudex and taproot) also is abundant at the site and generally in the Pat Hills area. Intermediates between *E. decrescens* and the other two species are not evident. Among the three species, flowering in the Pat Hills begins first in *E. incomptus*, followed by *E. divergens*, and then by *E. decrescens*.

Erigeron decrescens may be a native South American "conyzoid" species, perhaps arriving in Arizona via the cattle industry, but if so it apparently has not been named there. Or it may instead be closely related to the native *Erigeron divergens* complex. The distinctive features of these plants primarily reflect reductions in length — especially the shorter stems and shorter ray corollas — and it seems reasonable to suspect that the striking transition in aspect might be mediated by relatively simple genetic changes.



Figure 1. *Erigeron decrescens*, from the type collection.



Figure 2. *Erigeron descrescens*, from the type collection.



Figure 3. Cochise Co., Arizona, with type locality of *Erigeron decrescens*. Plants corresponding to *E. decrescens* were not documented by Makings (2006) along the San Pedro River. Google Earth map.



Figure 4. Type locality of *Erigeron decrescens*. Photo by Chris Roll, 14 February 2020.



Figure 5. *Erigeron decrescens* at the type locality. Photo by Chris Roll, 22 April 2019.



Figure 6. *Erigeron divergens* (left) and *E. decrescens* (right), at the type locality of *E. decrescens*. Photo by Chris Roll, 22 April 2019.



Figure 7. *Erigeron decrescens* at the type locality. Photo by Chris Roll, 22 April 2019.



Figure 8. *Erigeron descrescens*, vestiture. Leaf (top) and nodal area (bottom).



Figure 9. *Erigeron descrescens*, young and mature heads.

LITERATURE CITED

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- Roll, C.M. 2018. A preliminary checklist of the vascular plants of the Pat Hills desert grassland, Sulphur Springs Valley, southeastern Arizona. *Proceedings of the Madrean Conference 2018*. Abstract, p. 108. <<http://www.skyislandalliance.org/wp-content/uploads/2018/05/MadCon-2018-Program.pdf>>